

## Chapter 6

# Combat Support

This chapter is applicable to all types of recon activities in which the recon team will be working with other CS elements.

An engineer recon team must take full advantage of available CS assets to accomplish its mission and reduce its vulnerability on the battlefield. CS may be provided by mortars, field artillery (FA), ADA, GSR, and aviation assets. None of these assets are organic to the engineer battalion but may be available through the brigade or TF. Engineer scouts must understand the capabilities and limitations of these CS assets.

## INDIRECT-FIRE SUPPORT

Mortars and FA are the primary means of indirect-fire support available to recon teams on the battlefield. Engineer recon teams may request fires to—

- Assist in disengaging from the enemy.
- Provide harassing fire on enemy engineers emplacing obstacles.
- Cover movement.

The FSOs at TF and brigade levels plan and coordinate indirect fires. In addition to understanding the capabilities and limitations of these assets, engineer scouts must know what fire-request channels to use to request fires. FM 6-30 explains how to call for and adjust fires.

## MORTAR SUPPORT

A 4.2-inch mortar platoon of six tubes is organic to armor and mechanized-infantry battalions. A 4.2-inch mortar section is organic to the armored cavalry troop (two tubes) and division cavalry troop (three tubes). The 4.2-inch mortar has a maximum effective range of 6,740 meters.

The 120-mm mortar is replacing the 4.2-inch mortar system in the mechanized infantry and armor battalions. The rates of fire per tube are a maximum of 15 rounds per minute (rpm) for 1 minute with a sustained rate of 4 rpm. The system weighs 320 pounds and the round weighs 33 pounds. The ranges of the various rounds for the M120 are shown in Table 6-1.

**Table 6-1. M120 ranges**

Ranges	Minimum	Maximum
HE M57	200 m	7,200 m
WP M68	200 m	7,200 m
ILLUM M91	200 m	7,100 m

Mortars provide indirect-fire support that is immediately responsive to the recon team's needs. They can provide a heavy volume of accurate, sustained fires. They are ideal weapons for attacking targets on reverse slopes; in narrow ravines or trenches; and in forests, towns, and other areas that are difficult to strike with low-angle fires.

### Capabilities

In support of an engineer recon team, a mortar platoon can—

- Provide fast response times.
- Provide destructive target effects.

### Limitations

Mortars are limited because—

- They have only short-range capability.
- There are limited types of ammunition available.
- Mortar elements can carry only limited amounts of ammunition.
- Their fire-direction center (FDC) and tubes are not directly linked to the supporting field artillery's FDC.

### Available Munitions

A wide variety of munitions can be employed with mortars, including—

- **High-explosive (HE) rounds.** HE rounds can be used to force the enemy to button up or move to less advantageous positions. However, HE mortar rounds will not destroy armored vehicles unless a direct hit is achieved.
- **Smoke.** White-phosphorous (WP) rounds are used for obscuration and screening. Mortar smoke builds up faster than artillery smoke; however, it also dissipates much faster. Obscuration is achieved by placing smoke on or near enemy positions where the wind will cause it to obscure their vision. Screening is achieved by placing smoke between the enemy and the recon team's position to conceal movement. Mortar smoke is also used to mark enemy positions to orient direct fires. Scouts cannot allow smoke to work against them by marking their own positions for enemy gunners.
- **Illumination (illum).** Illumination rounds are used to light an area or enemy position during periods of limited visibility. Ground-burst illumination is used to mark enemy positions and to provide a thermal target reference point (TRP) for controlling fires. Scouts must take care not to illuminate friendly positions. Also, because US night-vision devices are superior to those of most potential adversaries, illuminating the battlefield may be unnecessary or even counterproductive.

### FIELD ARTILLERY

Recon teams must fully understand how to use artillery support to their best advantage. It is often their primary means of impeding and disrupting enemy

formations and suppressing enemy positions. FA support can provide immediate, responsive, accurate fires with a wide variety of munitions.

FA support is normally provided by an artillery battalion in DS of a committed maneuver brigade or an armored cavalry regiment (ACR) or a squadron. The armored cavalry squadron also has its organic howitzer battery to provide dedicated indirect-fire support. Recon teams generally receive FA support through the FSO.

### **Capabilities**

In support of the engineer recon team, FA elements can—

- Provide fire support in all weather conditions and types of terrain.
- Shift and mass fires rapidly.
- Support the battle in depth with long-range fires.
- Provide a variety of conventional shell and fuze combinations.
- Provide continuous fire support by careful positioning and timely displacement.
- Maintain the same mobility as the supported unit.

### **Limitations**

FA support has the following limitations:

- Limited capability against moving targets.
- Limited capability to destroy point targets without considerable ammunition expenditure.
- Vulnerability to detection by enemy target-acquisition systems because of its firing signature.

### **Available Munitions**

The FA employs a wide variety of munitions that can be tailored for the engagement of different types of targets. These ammunition types include—

- HE—for use against personnel, field fortifications, and vehicles.
- Smoke—for obscuration, screening, signaling, and marking.
- Illumination—for lighting an area or enemy position during periods of limited visibility.
- Cannon-launched guided projectiles (Copperhead rounds)—for use against armored vehicles.
- Improved conventional munitions (ICM) (for AP use) and DPICM (for use against personnel and light armored vehicles in the open). The danger to friendly troops in areas where AP munitions are fired must be considered.
- SCATMINES (including area-denial munitions)—for use against personnel and remote antiarmor mines for use against armored vehicles.

**FIRE-SUPPORT TEAM (FIST)**

A FIST is attached to companies or troops for combat operations. It may be task-organized to a TF scout platoon to support security operations when on-target designation is required for special munitions engagements. However, the FIST is a valuable resource because of its C<sup>2</sup> link with the artillery; it should not be exposed to direct fires except when absolutely necessary. A FIST is organized, equipped, and trained to provide—

- A fire-support advisor and coordinator.
- A communications link to all available fire support.
- On-the-spot support for infantry companies (10-man teams) or for armor companies and cavalry troops (4-man teams).

The armor/mechanized infantry FIST normally monitors the following radio nets:

- The attached unit's command net (battalion, company, or scout platoon).
- The battalion's mortar fire-direction net.
- The DS battalion's fire-direction net (digital).
- The battalion's fire-support net (voice).

The armored cavalry troop FIST normally monitors the following radio nets:

- The troop's command net.
- The troop's fire-support net.
- The supporting artillery's fire-direction net (voice and digital).
- The squadron's fire-support net.

The FIST serves as the net control station (NCS) for the troop's fire-support net. The FSE serves as the NCS on the maneuver battalion's fire-support net. The FIST relays the call for fire to supporting artillery on a digital net or sends the fire mission to the mortar platoon or section. The command net allows the FIST to monitor operations. It links the FIST to the commander and platoon leaders for planning and coordination.

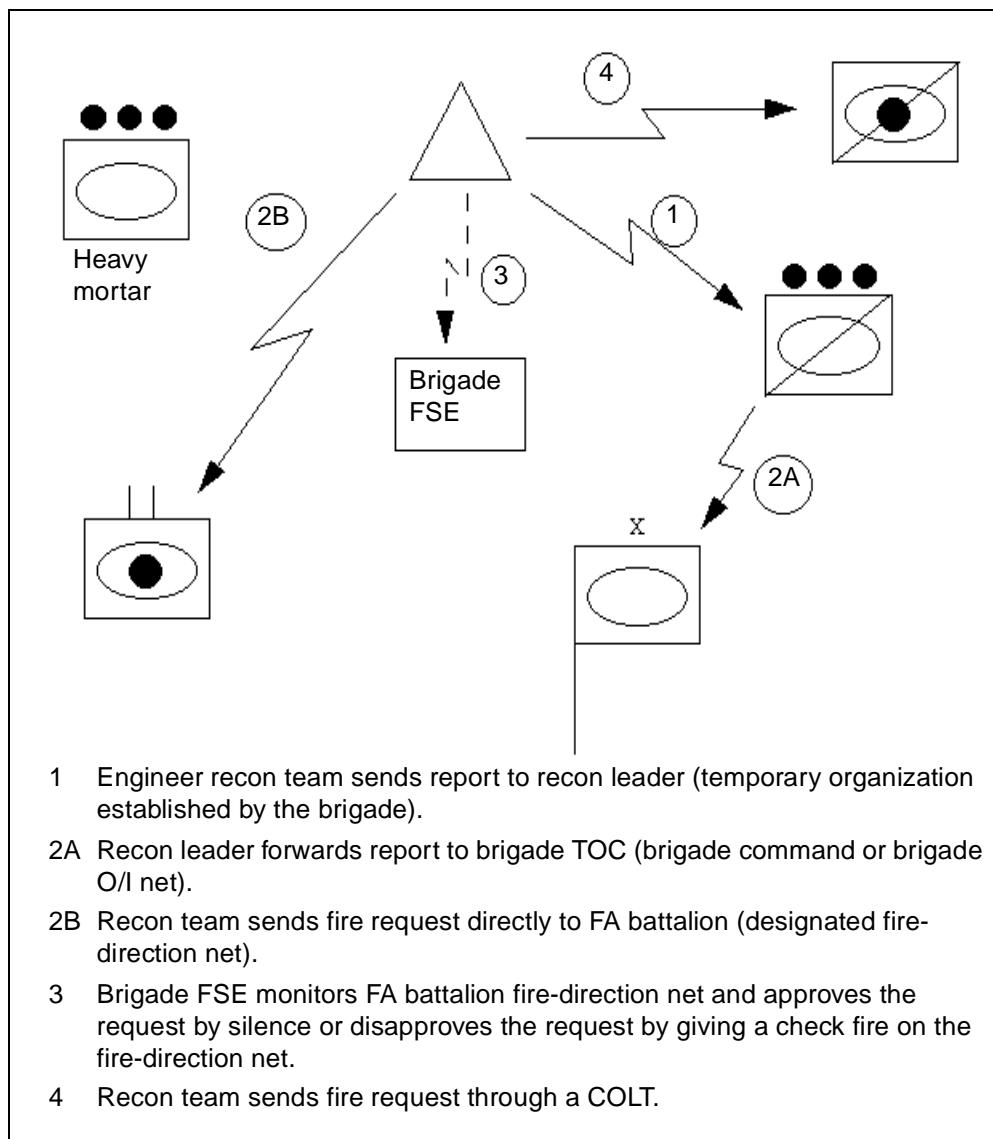
**FIRE-REQUEST CHANNELS**

The following paragraphs describe possible fire-request channels the recon team may use under various command or support relationships. Given the numerous possible uses of engineer recon teams and command or support relationships, all possible situations are not discussed. The recon team leader must clearly understand the fire-request channel he will be using and who will clear his request for fires.

**Engineer Recon Team Working Under Brigade Control**

There are several ways that an engineer recon team can request indirect fire while under brigade control. The brigade's SOP or OPORD should specify which method it will use. The engineer recon team leader must coordinate with the brigade's FSO/FSE on which methods will be used.

The team can send requests for artillery fire to the recon leader (someone the brigade has put in control of all recon assets working under brigade control) or directly to the FA battalion on a fire-direction net. The FSE monitors the requests (see Figure 6-1).



**Figure 6-1. Possible methods to request fire while under brigade control**

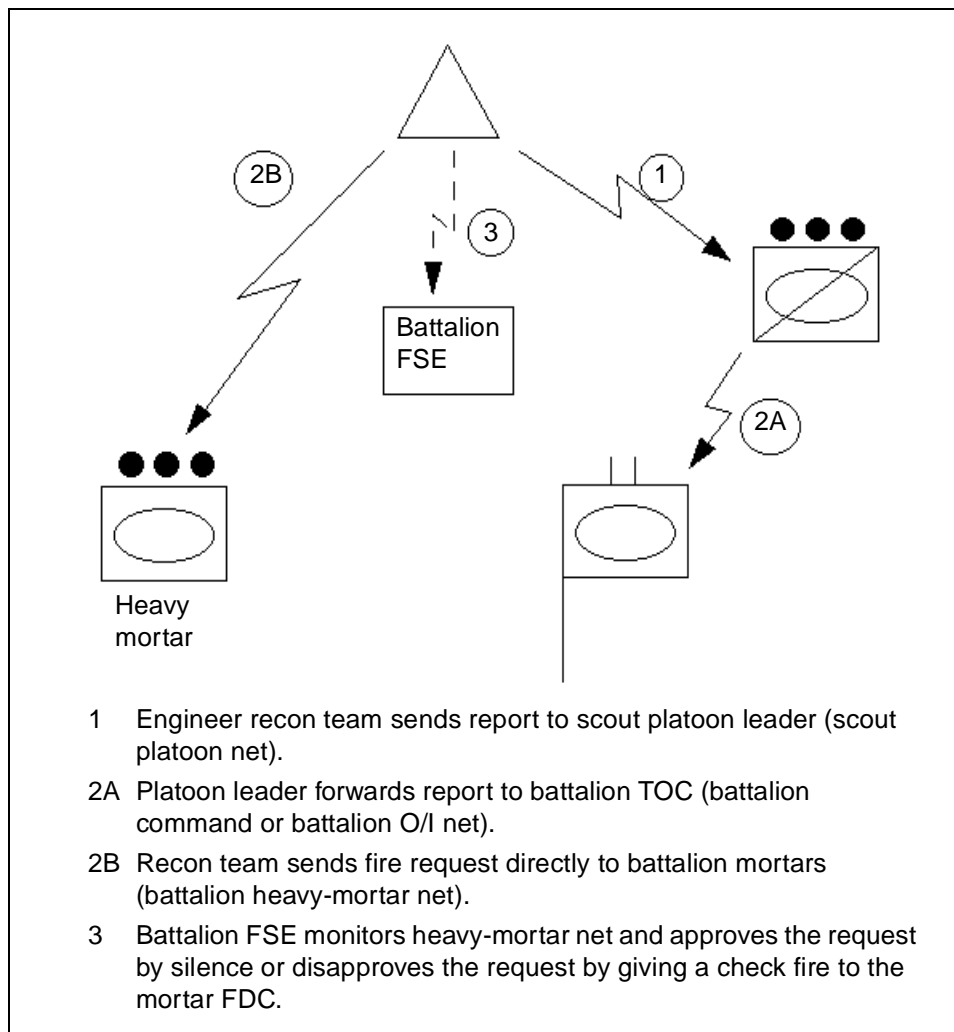
Requests for indirect fire can also be sent through the COLT, which has a secondary mission of processing these requests. The COLT monitors the net designated in the OPORD and handles the fire request and subsequent adjustments as a normal FIST. It has the primary mission of laz ing targets for Copperhead rounds and close air support (CAS). A COLT can enter the laz ing information directly into fire-support channels. A COLT is organic to each of the three DS 155-mm FA battalions of the armor and mechanized infantry and to the howitzer battery of the armored cavalry squadron. The cavalry

squadron has one organic COLT. From company/troop to brigade level, a COLT is placed under the control of a fire-support coordinator to augment the FIST's lazing capability and to function as a dedicated observation platform.

### Engineer Recon Team Working in a TF's Area or Under a TF's Control

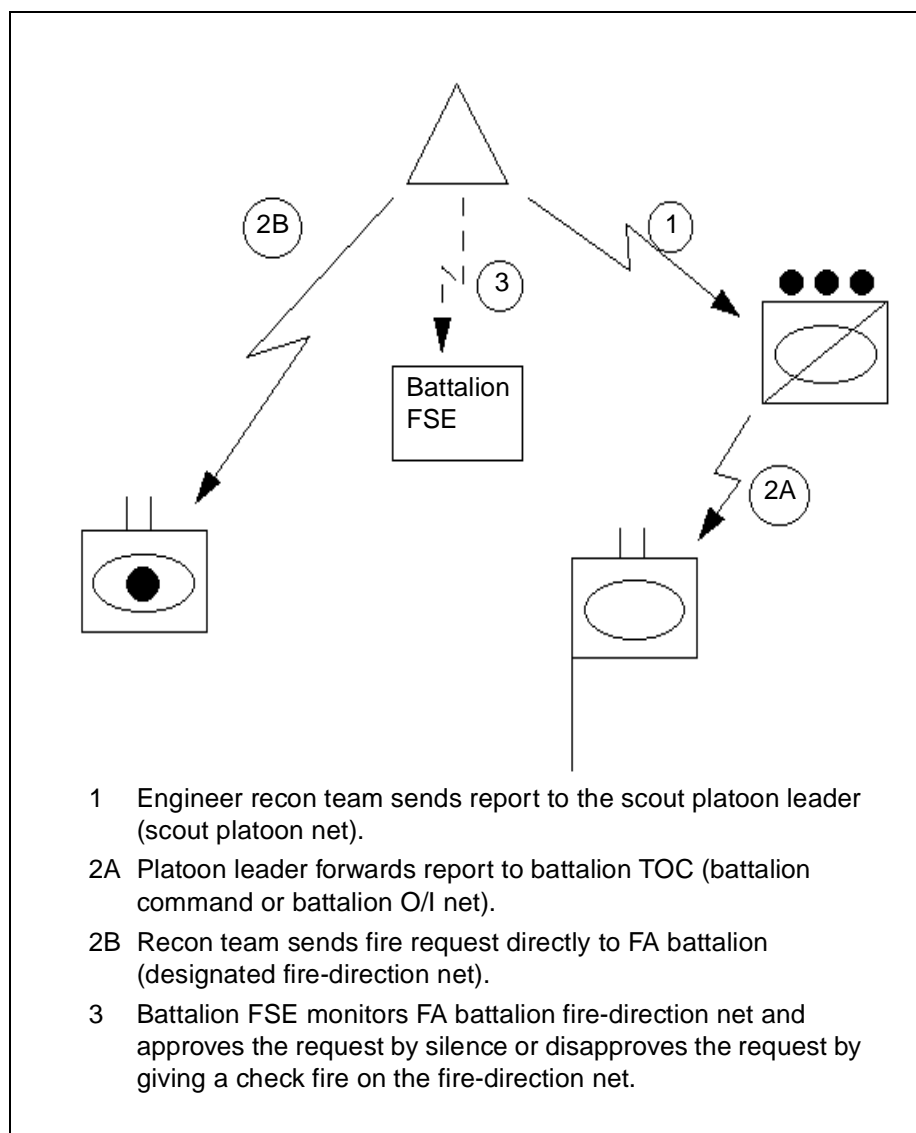
There are several ways that an engineer recon team can request indirect fire while working in a TF's area or under a TF's control. The TF's SOP or OPORD should specify which method it will use. The engineer recon team leader must coordinate with the TF FSO/FSE on which methods will be used.

The team can send requests for mortar fire to the scout platoon leader or directly to the mortar platoon on the battalion's heavy mortar net. The FSE monitors the requests (see Figure 6-2).



**Figure 6-2. Possible methods to request fire from battalion mortars**

The team can send requests for artillery fire to the TF scout platoon leader or directly to the FA battalion on a fire-direction net. The FSE monitors the requests (see Figure 6-3).

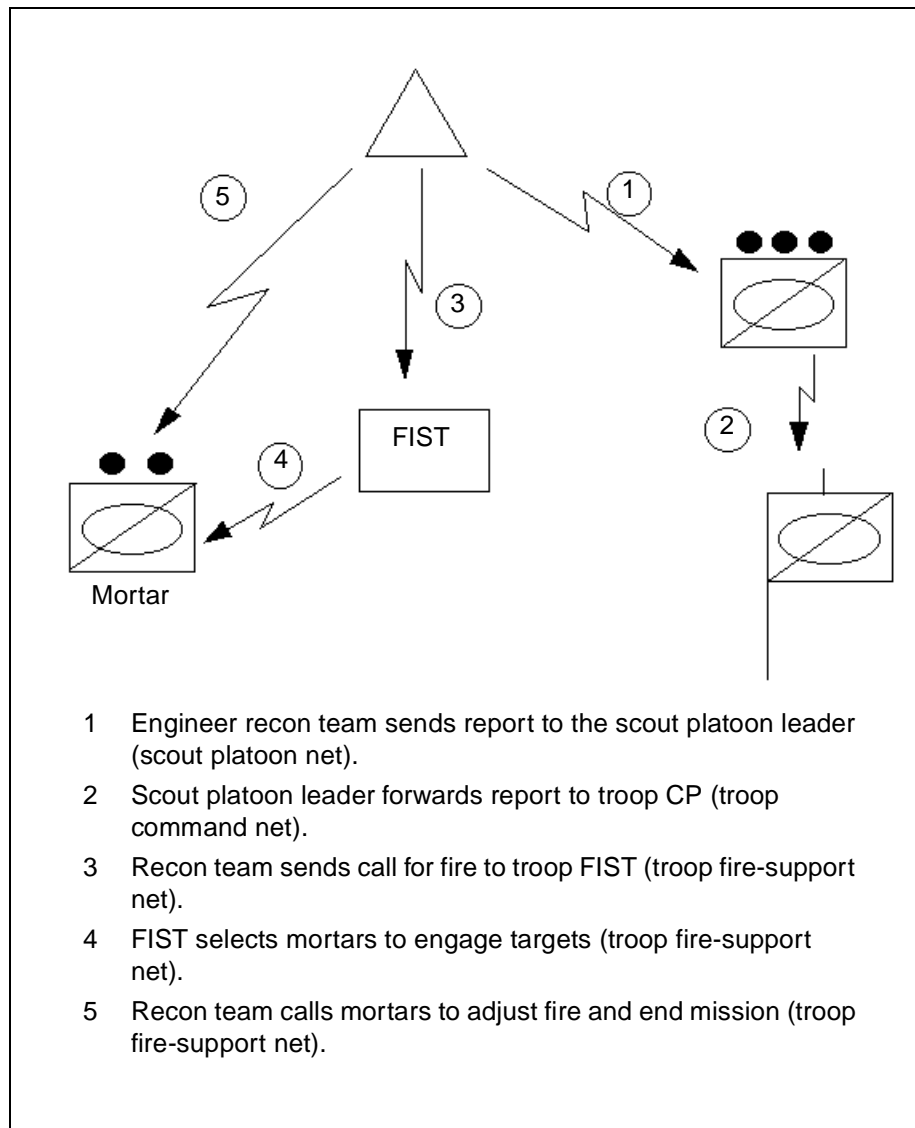


**Figure 6-3. Possible methods to request fire from FA battalion**

### **Engineer Recon Team Working with a Cavalry Squadron or Under Troop Control**

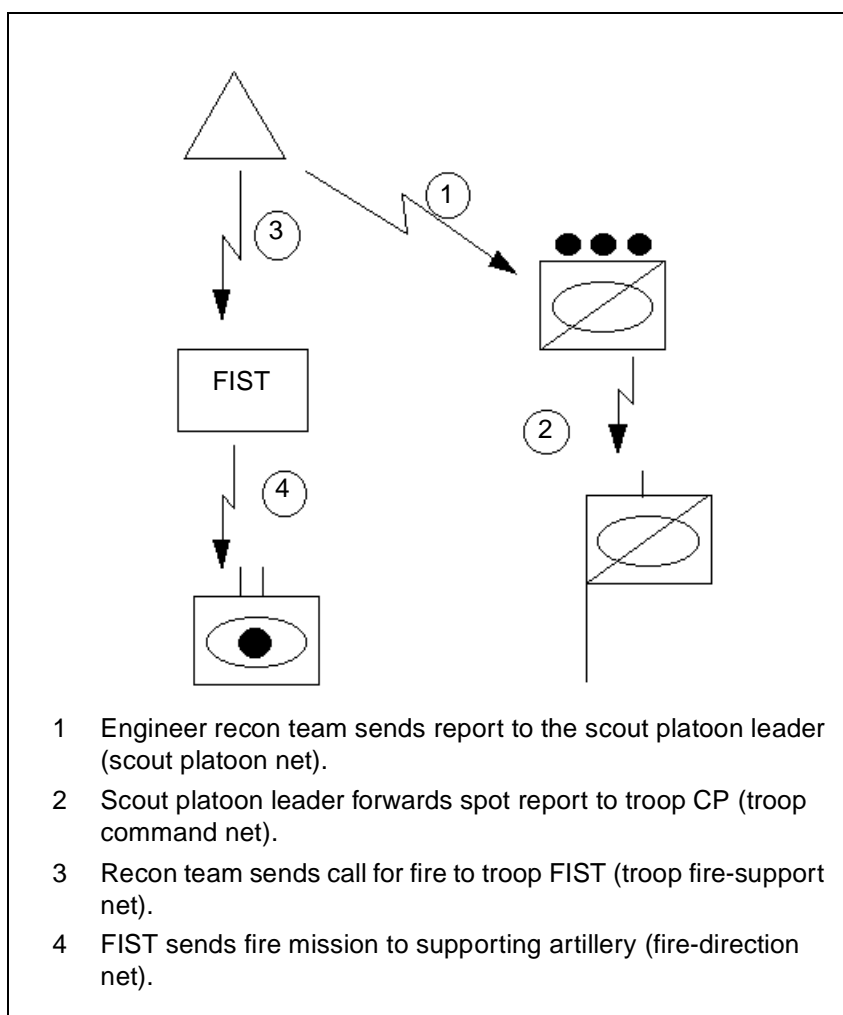
A recon team working under squadron control would request fire the same way as if it were under brigade control (see Figure 6-1, page 6-5). However, if the recon team is placed under a troop's control, the call for fire changes slightly. When working for or with an armored cavalry troop, requests for all indirect-fire support normally goes through the troop FIST on the troop's fire-support net. The FIST selects the best available fire support to engage the target. If the FIST passes the fire mission to the troop mortar platoon, the recon team sends all adjustments of the fire mission directly to the mortar

platoon (see Figure 6-4). If the FIST passes the fire mission to a supporting artillery unit, the recon team sends all adjustments of the fire mission to the FIST, who relays the message to the artillery unit on a digital fire-direction net (see Figure 6-5).



**Figure 6-4. Possible methods to request fire from mortars**





**Figure 6-5. Possible methods to request fire from artillery**

## **AIR DEFENSE**

Air-defense assets are scarce; maneuver units cannot plan on always receiving dedicated air-defense protection. Consequently, recon teams must be able to protect themselves from enemy air attacks during all combat operations. Air-defense measures include taking actions to avoid enemy air attack or to limit the damage if attacked and, if necessary, fighting back.

### **PASSIVE AIR DEFENSE**

Passive air defense is the team's first line of defense against enemy air attack. It includes all measures—other than active defense—taken to minimize the effects of hostile air action. There are two types of passive air defense: attack avoidance and damage-limiting measures.

#### **Attack Avoidance**

If an enemy pilot cannot find you, he cannot attack you. Recon teams use concealment, camouflage, deception, and any other necessary action to prevent the enemy from seeing them.

Team positions must provide effective concealment. When concealment is not available, vehicles must be camouflaged to blend into the natural surroundings. Track marks leading into the position must be obliterated. All shiny objects that reflect light and attract attention must be covered.

#### **Damage-Limiting Measures**

Dispersion is one of the most effective ways to reduce the effects of enemy air attack. When the team is on the move and air guards identify an enemy air attack, vehicles disperse quickly, move to a concealed position if possible, and stop (a stationary vehicle is more difficult to see than a moving one).

Another damage-limiting measure is using natural or man-made cover to reduce the effects of enemy munitions. Folds in the earth, depressions, buildings, and sandbagged positions can provide this protection.

### **ACTIVE AIR DEFENSE**

Although passive measures are the first line of defense against an air attack, a recon team must be prepared to engage enemy aircraft. The decision to fight back against an air threat is based on the situation and the capabilities of the organic weapon systems. All team members must understand the weapon-control status. They can defend against direct attacks but cannot engage aircraft that are not attacking them unless the weapon-control status allows it.

Engineer scouts have several weapon systems (machine guns and small arms) that can be used against aircraft. Engaging aircraft with volume fire is the key to effectively using small-arms and machine-gun fires against an air attack. These fires must be coordinated to be effective. Delivered on the team leader's command, they are directed at an aim point in front of the target; gunners do not attempt to track the target. The rules for selecting the aim point are listed in Table 6-2. They are simple and logical; they must be learned and retained by everyone in the team.

Table 6-2. Selecting aim point

Type Aircraft	Course	Aim Point
Jet	Crossing	Two football fields in front of nose
Jet	Overhead	Two football fields in front of nose
Jet	Directly at you	Slightly above aircraft nose
Helicopter	Crossing	One-half football field in front of nose
Helicopter	Hovering	Slightly above helicopter body
Helicopter	Directly at you	Slightly above helicopter body

The three weapon-control statuses are—

- **Hold**—weapons are fired only in self-defense or in response to a formal order.
- **Tight**—weapons are fired only at aircraft positively identified as hostile.
- **Free**—weapons are fired at any aircraft not positively identified as friendly.

The three air-defense warning conditions are—

- **White**—an air attack is not probable.
- **Yellow**—an air attack is probable.
- **Red**—an air attack is imminent or in progress.

## AIR SUPPORT

The Air Force provides CAS, which can be employed to destroy large enemy armor formations. CAS strikes are either preplanned (at TF or squadron level) or requested on an immediate-need basis through the TF's forward air controller (FAC). The FAC on the ground or in the air acts as a link between the ground element and the CAS aircraft.

Army air cavalry and/or attack helicopters are best equipped to coordinate with Air Force assets in joint air-attack team (JAAT) and attack-helicopter operations. The air cavalry can see the battlefield and the target better than ground forces can, and it has the radio equipment needed to talk to Air Force aircraft. The attack aircraft organic to the air cavalry can assist CAS aircraft in suppressing the enemy ADA threat. Reference FMs 1-114 and 17-95-10 for more information on using the Army air cavalry to assist in CAS operations.

Although planning normally begins at battalion/squadron level, a scout platoon may be called on to provide information for CAS employment. Engineer scouts should familiarize themselves with the procedures to call for CAS. If CAS assets are working for the same TF/brigade that the recon team is working for, the teams should provide suppressive fires on any known or suspected enemy ADA locations.

Friendly positions should always be marked during close air strikes. Marking is almost always necessary when friendly troops are within 300 meters of the target. Resources for marking positions include the following:

- **Smoke.** The smoke grenade is the most commonly used marker, but it has limitations. Wind may cause smoke to drift above trees, and some colors can blend with the background. Violet or white smoke shows up well with most backgrounds.
- **Flares.** Flares are good for attracting attention at night; they are sometimes effective during the day.
- **Mirrors.** Signal mirrors are probably the best ground-to-air devices for attracting attention. If the sun is shining and the operator is skillful, pilots can see a mirror flash miles away. VS-17 signal panels are also good visual references for pilots.
- **Lights.** Pocket-sized, battery-powered strobe lights produce brilliant white or blue flashes at about 1 1/2-second intervals. The flash is visible at night for 1 to 3 miles. Vehicle lights, such as an unshielded red taillight, are visible to a pilot for several miles at night. Chemical glow lights can be used to mark friendly positions. Another technique that can be used at night is to tie an infrared or green chemical light on a 10-foot string. When aircraft are in the area, a team member can swing the rope in a circular motion to mark the location.

Evolving technology provides a more accurate, secure, and effective means of supplementing or replacing traditional methods. Using a GPS will pinpoint a position to avoid fratricide during CAS operations.

## GROUND SURVEILLANCE RADAR

A GSR team can augment a recon team's surveillance capability by detecting targets and providing accurate range and azimuth readings to enemy locations and obstacles during limited-visibility conditions. A team consists of three soldiers, one AN/PPS-5 radar unit, and an APC or a HMMWV.

For combat operations, GSR teams are usually attached to TFs and squadrons. The teams may be attached or under OPCON to companies/troops or recon elements for specific missions. When GSR is attached or under OPCON to a recon team, the team leader must plan its employment.

### CAPABILITIES AND LIMITATIONS

GSR teams provide mobile, all-weather battlefield surveillance. When employed in pairs, they can provide observation from a given vantage point 24 hours a day.

The AN/PPS-5 has a line-of-sight range of 10,000 meters against vehicles and 6,000 meters against personnel. It can detect targets through light camouflage, smoke, haze, light snow and rain, and darkness. Foliage, heavy rain, and snow seriously restrict its radar-detection capability.

GSR is designed to detect targets moving against a background. It is generally ineffective against an air target unless the aircraft is flying close to the ground. It is vulnerable to enemy direction-finding and jamming equipment. The GSR team is normally equipped with a single radio. If forward with the recon team, the GSR team should send all reports to the recon team.

## EMPLOYMENT

A GSR team should be assigned a specific sector of surveillance and frequency of coverage. However, GSR cannot be used for continuous surveillance because the enemy can detect radar signals. The tasks assigned to GSR teams in their surveillance mission may include the following:

- Searching avenues of approach or possible enemy positions on a scheduled or random basis to determine the location, size, and composition of enemy forces and the nature of their activity.
- Monitoring point targets such as bridges, defiles, or road junctions and reporting quantity, type, and direction of enemy vehicles and personnel moving through the target area.
- Extending the recon team's observation capabilities by enabling them to survey distant points and areas of special interest.

GSR must be positioned in an area that is free of ground clutter (such as trees, thick vegetation, and buildings) and that affords long-range observation and a wide field of view. Normally, the team will be assigned a general area, and the GSR team leader will select the specific position. To avoid enemy suppressive fires, the team should be prepared for rapid displacement by selecting several alternate positions ahead of time.

During a recon, GSR is best employed to the recon team's flanks or oriented on potential enemy locations. Since recon is a moving operation, the GSR teams will have to move as necessary to support the team.

## CHEMICAL

When in a nuclear, biological, and chemical (NBC) environment, NBC recon elements can augment an engineer recon team's operational capability by providing NBC detection, warning, and sampling. The Fox (or its replacement) is a high-speed, high-mobility, wheeled, armored carrier capable of performing NBC recon on primary, secondary, or cross-country routes throughout the battlefield. The basic item or equipment to perform NBC recon is the M93-series NBC Reconnaissance System (NBCRS) or the Fox vehicle. A team consists of one Fox vehicle with its crew; two Fox vehicles and their crews compose a squad. NBC recon units are organic to the heavy division, the corps, the ACR, and the light ACR.

Depending on the other assigned priorities, an NBC recon team may be attached or under OPCON to an engineer battalion or a TF for specific missions. The NBC recon team can significantly enhance the engineer recon teams by being integrated into the overall R&S plan for monitoring NAIs.

## CAPABILITIES AND LIMITATIONS

An NBC recon team assists an engineer recon team and in turn provides the maneuver force commander with information to maintain momentum and flexibility and avoid contamination.

The team has the capability to—

- Conduct an NBC recon and survey while on the move.

- Conduct an NBC recon mission without exiting the vehicle.
- Provide location data to better delineate contamination.
- Use a marking system that allows contamination to be marked without exposing the crew.
- Cover large areas due to its mobility.
- Communicate digitally.

The team is limited because it—

- Is not heavily armored.
- Cannot conduct standoff chemical surveillance with the M21 Rascal on the move.
- Does not have biological detection/identification capability.

The NBC recon team is equipped with the AN/VRC-89 and AN/VRC-90 radios and can communicate with both the engineer recon team and the engineer battalion or TF.

## **EMPLOYMENT**

In an NBC environment, there are relatively sudden and drastic changes in the tactical situation, including—

- Dispersion.
- Mobility.
- Decentralization of control.
- Rapid exploitation.
- Reduction of reaction time.

In this type of environment, route recon assumes even greater importance than in conventional operations. Not only will more routes be required to support operations, but the engineer recon team must be alerted to widespread areas of contamination created by weapons of mass destruction. NBC recon elements/teams will provide an effective means of alerting engineer recon teams to these NBC hazards.

NBC recon performs five critical tasks on the battlefield: detect, identify, mark, report, and sample. Detecting NBC hazards early will permit timely warning of engineer recon teams preparing for or actually performing their critical missions. Knowing that NBC hazards are present in a planned AO will enable engineer recon personnel to avoid the area, take the appropriate protection level, or treat casualties that may result, if required.

The tasks assigned to the NBC recon team in its support role of performing route, zone, area, and point recon include the following:

- NBC route recon (a directed effort to obtain information on a specific route). The team—
  - Recons the assigned route and determines the location of any contamination.

- Locates and marks bypassed routes if contamination is encountered.
- Reports and marks all NBC hazards along the route.
- NBC zone recon (a directed effort to obtain detailed information about NBC hazards within a specified zone). The team—
  - Recons all terrain within the zone for contamination.
  - Locates all previously reported NBC attack areas and determines if a hazard is still present.
  - Locates all possible contamination within the zone.
  - Checks all water sources for contamination.
  - Marks contaminated areas.
- NBC area recon (a directed effort to obtain detailed information concerning a specific area). The team—
  - Conducts a survey to define the extent of contamination.
  - Locates and marks clear bypass routes.
- NBC point recon (a directed effort to obtain detailed information concerning a specific terrain feature). The team—
  - Conducts a survey to define the extent of contamination.
  - Collects samples.
  - Locates and marks clear bypass routes.

Chemical mechanized smoke platoons also have the capability to augment engineer recon-team operations when the latter team in the defense is employed to—

- Screen if the engineer battalion is required to occupy a battle position as an engineer TF.
- Overwatch a friendly emplaced scatterable minefield.
- Overwatch NAIs where enemy scatterable minefields are known.

The smoke platoon will probably be OPCON to the engineer battalion for specific missions.

